

Tunable Single Frequency 2.054 Micron Fiber Laser Using New Ho-Doped Fiber, Phase I

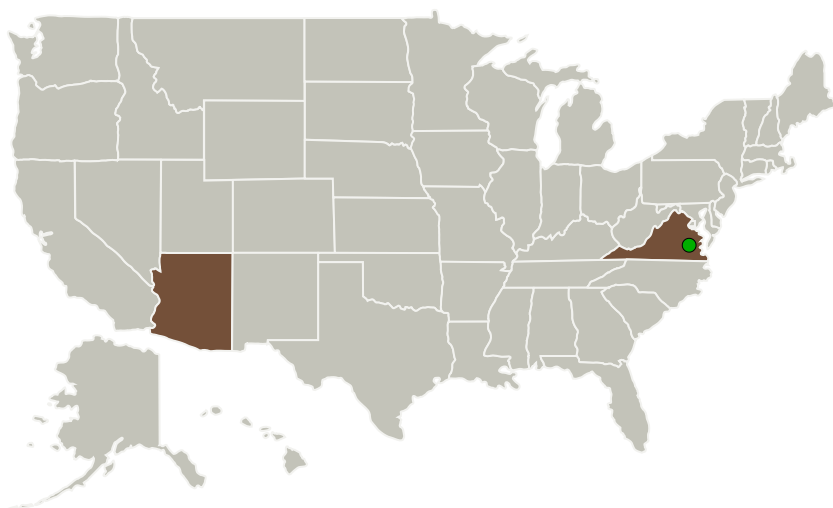
Completed Technology Project (2012 - 2012)



Project Introduction

In this proposal, we propose to demonstrate and build a near 2 micron widely tunable, narrow linewidth, single frequency fiber laser by developing an innovative Ho-doped single mode fiber. Such near 2 micron fiber laser is needed for coherent lidar and interferometric fiber sensing. In Phase I, we will design and fabricate this new fiber, demonstrate fixed wavelength narrow linewidth single frequency fiber laser with linewidth of less than 3KHz, demonstrate wavelength tuning range of greater than 10nm and demonstrate 5GHz frequency modulation with no any mode-hopping. Successful demonstration of such a fiber laser will enable many new NASA and commercial applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AdValue Photonics, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Tucson, Arizona
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations

Arizona

Virginia

Project Transitions

 **February 2012:** Project Start

 **August 2012:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/139533>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

AdValue Photonics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

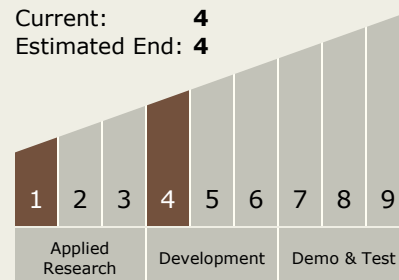
Carlos Torrez

Principal Investigator:

Shibin S Jiang

Technology Maturity (TRL)

Start: **1**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System